

## SEQUENCE LISTING

<110> Hurst, Deborah  
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<120> Methods of Therapy for Cancers  
Expressing the CD40 Antigen

<130> PP23220.001 (281250)

<150> 60/565,710  
<151> 2004-04-27

<150> 60/525,579  
<151> 2003-11-26

<150> 60/517,337  
<151> 2003-11-04

<160> 18

<170> FastSEQ for Windows Version 4.0

<210> 1  
<211> 720  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Coding sequence for light chain of CHIR-12.12  
human anti-CD40 antibody

<221> CDS  
<222> (1)...(720)

<400> 1  
atg gcg ctc cct gct cag ctc ctg ggg ctg cta atg ctc tgg gtc tct 48  
Met Ala Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Ser  
1 5 10 15

gga tcc agt ggg gat att gtg atg act cag tct cca ctc tcc ctg acc 96  
Gly Ser Ser Gly Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Thr  
20 25 30

gtc acc cct gga gag ccg gcc tcc atc tcc tgc agg tcc agt cag agc 144  
Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser  
35 40 45

ctc ctg tat agt aat gga tac aac tat ttg gat tgg tac ctg cag aag 192  
Leu Leu Tyr Ser Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys  
50 55 60

cca ggg cag tct cca cag gtc ctg atc tct ttg ggt tct aat cgg gcc 240  
Pro Gly Gln Ser Pro Gln Val Leu Ile Ser Leu Gly Ser Asn Arg Ala  
65 70 75 80

tcc ggg gtc cct gac agg ttc agt ggc agt gga tca ggc aca gat ttt 288  
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe  
85 90 95

aca ctg aaa atc agc aga gtg gag gct gag gat gtt ggg gtt tat tac	336
Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr	
100 105 110	
tgc atg caa gct cga caa act cca ttc act ttc ggc cct ggg acc aaa	384
Cys Met Gln Ala Arg Gln Thr Pro Phe Thr Phe Gly Pro Gly Thr Lys	
115 120 125	
gtg gat atc aga cga act gtg gct gca cca tct gtc ttc atc ttc ccg	432
Val Asp Ile Arg Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro	
130 135 140	
cca tct gat gag cag ttg aaa tct gga act gcc tct gtt gtg tgc ctg	480
Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu	
145 150 155 160	
ctg aat aac ttc tat ccc aga gag gcc aaa gta cag tgg aag gtg gat	528
Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp	
165 170 175	
aac gcc ctc caa tcg ggt aac tcc cag gag agt gtc aca gag cag gac	576
Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp	
180 185 190	
agc aag gac agc acc tac agc ctc agc agc acc ctg acg ctg agc aaa	624
Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys	
195 200 205	
gca gac tac gag aaa cac aaa gtc tac gcc tgc gaa gtc acc cat cag	672
Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln	
210 215 220	
ggc ctg agc tcg ccc gtc aca aag agc ttc aac agg gga gag tgt tag	720
Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys *	
225 230 235	

<210> 2  
 <211> 239  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Light chain of CHIR-12.12 human anti-CD40 antibody

<400> 2  
 Met Ala Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Ser  
 1 5 10 15  
 Gly Ser Ser Gly Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Thr  
 20 25 30  
 Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser  
 35 40 45  
 Leu Leu Tyr Ser Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys  
 50 55 60  
 Pro Gly Gln Ser Pro Gln Val Leu Ile Ser Leu Gly Ser Asn Arg Ala  
 65 70 75 80  
 Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe  
 85 90 95  
 Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr  
 100 105 110  
 Cys Met Gln Ala Arg Gln Thr Pro Phe Thr Phe Gly Pro Gly Thr Lys  
 115 120 125  
 Val Asp Ile Arg Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro  
 130 135 140  
 Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu

145	150	155	160
Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp			
165	170	175	
Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp			
180	185	190	
Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys			
195	200	205	
Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln			
210	215	220	
Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys			
225	230	235	

&lt;210&gt; 3

&lt;211&gt; 2016

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Coding sequence for heavy chain of CHIR-12.12  
human anti-CD40 antibody (with introns)

&lt;400&gt; 3

atggagtttg ggctgagctg ggtttcctt gttgctattt taagaggtgt ccagtgtcag 60  
gtcagttgg tggagtctgg gggaggcgtg gtccagcctg ggaggtccct gagactctcc 120  
tgtcagccct ctggattcac cttcagtagc tatggcatgc actgggtccg ccaggctcca 180  
ggcaaggggc tggagtgggt ggcagttata tcatatgagg aaagtaatag ataccatgca 240  
gactccgtga agggccgatt caccatctcc agagacaatt ccaagatcac gctgtatctg 300  
caaataaca gcctcagaac tgaggacacg gctgtgtatt actgtgcgag agatgggggt 360  
atagcagcac ctgggcctga ctactggggc cagggAACCC tggtcaccgt ctcctcagca 420  
agtaccaagg gcccattccgt cttcccccctg ggcgcgccta gcaagagcac ctctggggc 480  
acagcggccc tgggctgcct ggtcaaggac tactccccc aaccgggtgac ggtgtcggtg 540  
aactcaggcg ccctgaccag cggcgtgcac accttcccg ctgtcctaca gtcctcagga 600  
ctctactccc tcagcagcgt ggtgaccgtg ccctccagca gtttggcac ccagacactac 660  
atctgcaacg tgaatcacaa gcccagcaac accaagggtgg acaagagagt tggtgagagg 720  
ccagcacagg gagggagggt gtctgctgga agccaggctc agcgtcctg cctggacgca 780  
tcccggctat gcagtcctcag tccagggcag caaggcaggg cccgtctgcc tcttcacccg 840  
gaggcctctg cccgccccac tcatgctcag ggagagggtc ttctggctt ttcccccaggc 900  
tctggcagg cacaggctag gtgcccctaa cccaggccct gcacacaaag gggcaggtgc 960  
tgggctcaga cctgccaaga gccatatccg ggaggaccct gcccctgacc taagcccacc 1020  
ccaaaggcca aactctccac tccctcagct cggacacctt ctctcctccc agattccagt 1080  
aactcccaat cttctctctg cagagcccaa atcttgtgac aaaactcaca catgcccacc 1140  
gtgcccaggt aagccagccc aggcctcgcc ctccagctca aggcgggaca ggtgccctag 1200  
agttagcctgc atccaggggac aggccccagc cgggtgctga cacgtccacc tccatcttt 1260  
cctcagcacc tgaactcctg gggggaccgt cagtcttcctt ctcccccca aaacccaagg 1320  
acaccctcat gatctcccg acccctgagg tcacatgcgt ggtggggac gtgagccacg 1380  
aagaccctga ggtcaagttc aactggtagc tggacggcgt ggaggtgcat aatgccaaga 1440  
caaagcccgcg ggaggagcag tacaacagca cgtaccgtgt ggtcagcgtc ctcaccgtcc 1500  
tgcaccagga ctggctgaat ggcaaggagt acaagtgc当地 ggtctccaac aaagccctcc 1560  
cagccccat cgagaaaaacc atctccaaag ccaaagggtgg gaccctgggg gtgcgagggc 1620  
cacatggaca gaggccggct cggcccaccc tctggcctga gagtgaccgc tgcaccacc 1680  
tctgtcccta cagggcagcc cggagaacca caggtgtaca ccctggggcc atcccgagg 1740  
gagatgacca agaaccaggt cagcctgacc tgcctggta aaggcttcta tcccagcgc当地 1800  
atcgccgtgg agtgggagag caatggcag cggagaaca actacaagac cacgcctccc 1860  
gtgctggact ccgacggcctc cttttccctc tatagcaagc tcaccgtgga caagagcagg 1920  
tggcagcagg ggaacgttcc ctcatgctcc gtgatgcatg aggctctgca caaccactac 1980  
acgcagaaga gcctctccct gtctccgggt aaatga 2016

&lt;210&gt; 4

&lt;211&gt; 469

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Heavy chain of CHIR-12.12 human anti-CD40 antibody

<400> 4  
 Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Ile Leu Arg Gly  
 1 5 10 15  
 Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Val Val Gln  
 20 25 30  
 Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe  
 35 40 45  
 Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu  
 50 55 60  
 Glu Trp Val Ala Val Ile Ser Tyr Glu Ser Asn Arg Tyr His Ala  
 65 70 75 80  
 Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Ile  
 85 90 95  
 Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Thr Glu Asp Thr Ala Val  
 100 105 110  
 Tyr Tyr Cys Ala Arg Asp Gly Gly Ile Ala Ala Pro Gly Pro Asp Tyr  
 115 120 125  
 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly  
 130 135 140  
 Pro Ser Val Phe Pro Leu Ala Pro Ala Ser Lys Ser Thr Ser Gly Gly  
 145 150 155 160  
 Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val  
 165 170 175  
 Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe  
 180 185 190  
 Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val  
 195 200 205  
 Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val  
 210 215 220  
 Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys  
 225 230 235 240  
 Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu  
 245 250 255  
 Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr  
 260 265 270  
 Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val  
 275 280 285  
 Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val  
 290 295 300  
 Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser  
 305 310 315 320  
 Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu  
 325 330 335  
 Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala  
 340 345 350  
 Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro  
 355 360 365  
 Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln  
 370 375 380  
 Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala  
 385 390 395 400  
 Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr  
 405 410 415  
 Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu  
 420 425 430  
 Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser  
 435 440 445  
 Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser  
 450 455 460  
 Leu Ser Pro Gly Lys  
 465

<210> 5  
 <211> 469

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Heavy chain of variant of CHIR-12.12 human  
anti-CD40 antibody

&lt;400&gt; 5

Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Ile Leu Arg Gly  
 1 5 10 15  
 Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Val Val Gln  
 20 25 30  
 Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe  
 35 40 45  
 Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu  
 50 55 60  
 Glu Trp Val Ala Val Ile Ser Tyr Glu Ser Asn Arg Tyr His Ala  
 65 70 75 80  
 Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Ile  
 85 90 95  
 Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Thr Glu Asp Thr Ala Val  
 100 105 110  
 Tyr Tyr Cys Ala Arg Asp Gly Gly Ile Ala Ala Pro Gly Pro Asp Tyr  
 115 120 125  
 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly  
 130 135 140  
 Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly  
 145 150 155 160  
 Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val  
 165 170 175  
 Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe  
 180 185 190  
 Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val  
 195 200 205  
 Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val  
 210 215 220  
 Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys  
 225 230 235 240  
 Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu  
 245 250 255  
 Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr  
 260 265 270  
 Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val  
 275 280 285  
 Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val  
 290 295 300  
 Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser  
 305 310 315 320  
 Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu  
 325 330 335  
 Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala  
 340 345 350  
 Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro  
 355 360 365  
 Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln  
 370 375 380  
 Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala  
 385 390 395 400  
 Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr  
 405 410 415  
 Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu  
 420 425 430  
 Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser  
 435 440 445  
 Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser

450	455	460
Leu Ser Pro Gly Lys		
465		
<210> 6		
<211> 239		
<212> PRT		
<213> Artificial Sequence		
<220>		
<223> Light chain of CHIR-5.9 human anti-CD40 antibody		
<400> 6		
Met Ala Leu Leu Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro		
1	5	10 15
Gly Ser Ser Gly Ala Ile Val Met Thr Gln Pro Pro Leu Ser Ser Pro		
20	25	30
Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser		
35	40	45
Leu Val His Ser Asp Gly Asn Thr Tyr Leu Asn Trp Leu Gln Gln Arg		
50	55	60
Pro Gly Gln Pro Pro Arg Leu Leu Ile Tyr Lys Phe Phe Arg Arg Leu		
65	70	75 80
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe		
85	90	95
Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr		
100	105	110
Cys Met Gln Val Thr Gln Phe Pro His Thr Phe Gly Gln Gly Thr Arg		
115	120	125
Leu Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro		
130	135	140
Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu		
145	150	155 160
Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp		
165	170	175
Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp		
180	185	190
Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys		
195	200	205
Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln		
210	215	220
Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys		
225	230	235
<210> 7		
<211> 474		
<212> PRT		
<213> Artificial Sequence		
<220>		
<223> Heavy chain of CHIR-5.9 human anti-CD40 antibody		
<400> 7		
Met Gly Ser Thr Ala Ile Leu Ala Leu Leu Ala Val Leu Gln Gly		
1	5	10 15
Val Cys Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys		
20	25	30
Pro Gly Glu Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe		
35	40	45
Thr Ser Tyr Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu		
50	55	60
Glu Trp Met Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Arg Tyr Ser		
65	70	75 80
Pro Ser Phe Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser		

85	90	95
Thr Ala Tyr Leu Gln Trp Ser Ser	Leu Lys Ala Ser Asp	Thr Ala Met
100	105	110
Tyr Tyr Cys Ala Arg Gly Thr Ala Ala Gly Arg Asp	Tyr Tyr Tyr	
115	120	125
Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val	Thr Val Ser Ser	
130	135	140
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro	Leu Ala Pro Ala Ser Lys	
145	150	155
Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys	Leu Val Lys Asp Tyr	
165	170	175
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly	Ala Leu Thr Ser	
180	185	190
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser	Gly Leu Tyr Ser	
195	200	205
Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser	Leu Gly Thr Gln Thr	
210	215	220
Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn	Thr Lys Val Asp Lys	
225	230	235
Arg Val Glu Pro Lys Ser Cys Asp Lys	Thr His Thr Cys Pro Pro Cys	
245	250	255
Pro Ala Pro Glu Leu Leu Gly Pro Ser Val Phe	Leu Phe Pro Pro	
260	265	270
Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr	Pro Glu Val Thr Cys	
275	280	285
Val Val Val Asp Val Ser His Glu Asp Pro Glu	Val Lys Phe Asn Trp	
290	295	300
Tyr Val Asp Gly Val Glu Val His Asn Ala Lys	Thr Lys Pro Arg Glu	
305	310	315
Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser	Val Leu Thr Val Leu	
325	330	335
His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys	Cys Lys Val Ser Asn	
340	345	350
Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile	Ser Lys Ala Lys Gly	
355	360	365
Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro	Pro Ser Arg Glu Glu	
370	375	380
Met Thr Lys Asn Gln Val Ser Leu Thr Cys	Leu Val Lys Gly Phe Tyr	
385	390	395
Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn	Gly Gln Pro Glu Asn	
405	410	415
Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser	Asp Gly Ser Phe Phe	
420	425	430
Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg	Trp Gln Gln Gly Asn	
435	440	445
Val Phe Ser Cys Ser Val Met His Glu Ala Leu	His Asn His Tyr Thr	
450	455	460
Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys		
465	470	

&lt;210&gt; 8

&lt;211&gt; 474

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Heavy chain of variant CHIR-5.9 human anti-CD40 antibody

&lt;400&gt; 8

Met Gly Ser Thr Ala Ile Leu Ala Leu Leu Ala Val	Leu Gln Gly		
1	5	10	15
Val Cys Ala Glu Val Gln Leu Val Gln Ser Gly	Ala Glu Val Lys Lys		
20	25	30	

Pro Gly Glu Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe  
 35 40 45  
 Thr Ser Tyr Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu  
 50 55 60  
 Glu Trp Met Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Arg Tyr Ser  
 65 70 75 80  
 Pro Ser Phe Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser  
 85 90 95  
 Thr Ala Tyr Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met  
 100 105 110  
 Tyr Tyr Cys Ala Arg Gly Thr Ala Ala Gly Arg Asp Tyr Tyr Tyr  
 115 120 125  
 Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
 130 135 140  
 Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys  
 145 150 155 160  
 Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr  
 165 170 175  
 Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser  
 180 185 190  
 Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser  
 195 200 205  
 Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr  
 210 215 220  
 Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys  
 225 230 235 240  
 Arg Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys  
 245 250 255  
 Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro  
 260 265 270  
 Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys  
 275 280 285  
 Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp  
 290 295 300  
 Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu  
 305 310 315 320  
 Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu  
 325 330 335  
 His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn  
 340 345 350  
 Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly  
 355 360 365  
 Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu  
 370 375 380  
 Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr  
 385 390 395 400  
 Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn  
 405 410 415  
 Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe  
 420 425 430  
 Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn  
 435 440 445  
 Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr  
 450 455 460  
 Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys  
 465 470

<210> 9  
 <211> 612  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (0)...(0)

&lt;223&gt; Coding sequence for short isoform of human CD40

&lt;221&gt; CDS

&lt;222&gt; (1)...(612)

&lt;400&gt; 9

atg	gtt	cgt	ctg	cct	ctg	cag	tgc	gtc	ctc	tgg	ggc	tgc	ttg	ctg	acc	48
Met	Val	Arg	Leu	Pro	Leu	Gln	Cys	Val	Leu	Trp	Gly	Cys	Leu	Leu	Thr	
1									10					15		

gct	gtc	cat	cca	gaa	cca	ccc	act	gca	tgc	aga	gaa	aaa	cag	tac	cta	96
Ala	Val	His	Pro	Glu	Pro	Pro	Thr	Ala	Cys	Arg	Glu	Lys	Gln	Tyr	Leu	
20									25				30			

ata	aac	agt	cag	tgc	tgt	tct	ttg	tgc	cag	cca	gga	cag	aaa	ctg	gtg	144
Ile	Asn	Ser	Gln	Cys	Cys	Ser	Leu	Cys	Gln	Pro	Gly	Gln	Lys	Leu	Val	
35									40				45			

agt	gac	tgc	aca	gag	ttc	act	gaa	acg	gaa	tgc	ctt	cct	tgc	ggt	gaa	192
Ser	Asp	Cys	Thr	Glu	Phe	Thr	Glu	Thr	Glu	Cys	Leu	Pro	Cys	Gly	Glu	
50									55				60			

agc	gaa	ttc	cta	gac	acc	tgg	aac	aga	gag	aca	cac	tgc	cac	cag	cac	240
Ser	Glu	Phe	Leu	Asp	Thr	Trp	Asn	Arg	Glu	Thr	His	Cys	His	Gln	His	
65									70				75		80	

aaa	tac	tgc	gac	ccc	aac	cta	ggg	ctt	cg	gtc	cag	cag	aag	ggc	acc	288
Lys	Tyr	Cys	Asp	Pro	Asn	Leu	Gly	Leu	Arg	Val	Gln	Gln	Lys	Gly	Thr	
85									90				95			

tca	gaa	aca	gac	acc	atc	tgc	acc	tgt	gaa	gaa	ggc	tgg	cac	tgt	acg	336
Ser	Glu	Thr	Asp	Thr	Ile	Cys	Thr	Cys	Glu	Glu	Gly	Trp	His	Cys	Thr	
100									105				110			

agt	gag	gcc	tgt	gag	agc	tgt	gtc	ctg	cac	cgc	tca	tgc	tcg	ccc	ggc	384
Ser	Glu	Ala	Cys	Glu	Ser	Cys	Val	Leu	His	Arg	Ser	Cys	Ser	Pro	Gly	
115									120				125			

ttt	ggg	gtc	aag	cag	att	gct	aca	ggg	gtt	tct	gat	acc	atc	tgc	gag	432
Phe	Gly	Val	Lys	Gln	Ile	Ala	Thr	Gly	Val	Ser	Asp	Thr	Ile	Cys	Glu	
130									135				140			

ccc	tgc	cca	gtc	ggc	ttc	tcc	aat	gtg	tca	tct	gct	ttc	gaa	aaa	480
Pro	Cys	Pro	Val	Gly	Phe	Phe	Ser	Asn	Val	Ser	Ser	Ala	Phe	Glu	Lys
145									150				155		160

tgt	cac	cct	tgg	aca	agg	tcc	cca	gga	tgc	gct	gag	agc	cct	ggt	ggt	528
Cys	His	Pro	Trp	Thr	Arg	Ser	Pro	Gly	Ser	Ala	Glu	Ser	Pro	Gly	Gly	
165									170				175			

gat	ccc	cat	cat	ctt	cg	gat	cct	gt	tgc	cat	cct	ctt	ggt	gct	ggt	576
Asp	Pro	His	His	Leu	Arg	Asp	Pro	Val	Cys	His	Pro	Leu	Gly	Ala	Gly	
180									185				190			

ctt	tat	caa	aaa	ggt	ggc	caa	gaa	gcc	aac	caa	taa					612
Leu	Tyr	Gln	Lys	Gly	Gly	Gln	Glu	Ala	Asn	Gln	*					
195									200							

&lt;210&gt; 10

&lt;211&gt; 203

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 10

Met Val Arg Leu Pro Leu Gln Cys Val Leu Trp Gly Cys Leu Leu Thr

1	5	10	15
Ala	Val	His	Pro
Glu	Pro	Pro	Thr
20	25	30	
Ile	Asn	Ser	Gln
Cys	Cys	Ser	Leu
35	40	45	
Ser	Asp	Cys	Thr
Glu	Phe	Thr	Glu
50	55	60	
Ser	Glu	Phe	Leu
Asp	Thr	Trp	Asn
65	70	75	80
Lys	Tyr	Cys	Asp
Arg	Pro	Asn	Leu
75	80	85	90
Ser	Glu	Thr	Asp
95	100	105	110
Ser	Glu	Ala	Cys
110	115	120	125
Phe	Gly	Val	Lys
125	130	135	140
Pro	Cys	Pro	Val
140	145	150	155
Cys	His	Pro	Trp
155	160	165	170
Asp	Pro	His	His
175	180	185	190
Leu	Tyr	Gln	Lys
190	195	200	

<210> 11  
<211> 834  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (0)...(0)  
<223> Coding sequence for long isoform of human CD40

<221> CDS  
<222> (1)...(834)

<400> 11  
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Met Val Arg Leu Pro Leu Gln Cys Val Leu Trp Gly Cys Leu Leu Thr  
1 5 10 15

gct gtc cat cca gaa cca ccc act gca tgc aga gaa aaa cag tac cta 96  
Ala Val His Pro Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu  
20 25 30

ata aac agt cag tgc tgt tct ttg tgc cag cca gga cag aaa ctg gtg 144  
Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val  
35 40 45

agt gac tgc aca gag ttc act gaa acg gaa tgc ctt cct tgc ggt gaa 192  
Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu  
50 55 60

agc gaa ttc cta gac acc tgg aac aga gag aca cac tgc cac cag cac 240  
Ser Glu Phe Leu Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His  
65 70 75 80

aaa tac tgc gac ccc aac cta ggg ctt cgg gtc cag cag aag ggc acc 288  
Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr  
85 90 95

tca gaa aca gac acc atc tgc acc tgt gaa gaa ggc tgg cac tgt acg 336  
10

Ser	Glu	Thr	Asp	Thr	Ile	Cys	Thr	Cys	Glu	Glu	Gly	Trp	His	Cys	Thr	
100							105						110			
agt	gag	gcc	tgt	gag	agc	tgt	gtc	ctg	cac	cgc	tca	tgc	tcg	ccc	ggc	384
Ser	Glu	Ala	Cys	Glu	Ser	Cys	Val	Leu	His	Arg	Ser	Cys	Ser	Pro	Gly	
115							120					125				
ttt	ggg	gtc	aag	cag	att	gct	aca	ggg	gtt	tct	gat	acc	atc	tgc	gag	432
Phe	Gly	Val	Lys	Gln	Ile	Ala	Thr	Gly	Val	Ser	Asp	Thr	Ile	Cys	Glu	
130							135				140					
ccc	tgc	cca	gtc	ggc	ttc	tcc	aat	gtg	tca	tct	gct	ttc	gaa	aaa	480	
Pro	Cys	Pro	Val	Gly	Phe	Phe	Ser	Asn	Val	Ser	Ser	Ala	Phe	Glu	Lys	
145							150			155		160				
tgt	cac	cct	tgg	aca	agc	tgt	gag	acc	aaa	gac	ctg	gtt	gtg	caa	cag	528
Cys	His	Pro	Trp	Thr	Ser	Cys	Glu	Thr	Lys	Asp	Leu	Val	Val	Gln	Gln	
165							170			175						
gca	ggc	aca	aac	aag	act	gat	gtt	gtc	tgt	ggt	ccc	cag	gat	cgg	ctg	576
Ala	Gly	Thr	Asn	Lys	Thr	Asp	Val	Val	Cys	Gly	Pro	Gln	Asp	Arg	Leu	
180							185			190						
aga	gcc	ctg	gtg	atc	ccc	atc	atc	ttc	ggg	atc	ctg	ttt	gcc	atc	624	
Arg	Ala	Leu	Val	Val	Ile	Pro	Ile	Ile	Phe	Gly	Ile	Leu	Phe	Ala	Ile	
195							200			205						
ctc	ttg	gtg	ctg	ttt	atc	aaa	aag	gtg	gcc	aag	aag	cca	acc	aat	672	
Leu	Leu	Val	Leu	Val	Phe	Ile	Lys	Lys	Val	Ala	Lys	Lys	Pro	Thr	Asn	
210							215			220						
aag	gcc	ccc	cac	ccc	aag	cag	gaa	ccc	cag	gag	atc	aat	ttt	ccc	gac	720
Lys	Ala	Pro	His	Pro	Lys	Gln	Glu	Pro	Gln	Glu	Ile	Asn	Phe	Pro	Asp	
225							230			235		240				
gat	ctt	cct	ggc	tcc	aac	act	gct	gct	cca	gtg	cag	gag	act	tta	cat	768
Asp	Leu	Pro	Gly	Ser	Asn	Thr	Ala	Ala	Pro	Val	Gln	Glu	Thr	Leu	His	
245							250			255						
gga	tgc	caa	ccg	gtc	acc	cag	gag	gat	ggc	aaa	gag	agt	cgc	atc	tca	816
Gly	Cys	Gln	Pro	Val	Thr	Gln	Glu	Asp	Gly	Lys	Glu	Ser	Arg	Ile	Ser	
260							265			270						
gtg	cag	gag	aga	cag	tga										834	
Val	Gln	Glu	Arg	Gln	*											
275																

&lt;210&gt; 12

&lt;211&gt; 277

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 12

Met	Val	Arg	Leu	Pro	Leu	Gln	Cys	Val	Leu	Trp	Gly	Cys	Leu	Leu	Thr
1								10					15		
Ala	Val	His	Pro	Glu	Pro	Pro	Thr	Ala	Cys	Arg	Glu	Lys	Gln	Tyr	Leu
								20		25			30		
Ile	Asn	Ser	Gln	Cys	Cys	Ser	Leu	Cys	Gln	Pro	Gly	Gln	Lys	Leu	Val
								35		40			45		
Ser	Asp	Cys	Thr	Glu	Phe	Thr	Glu	Thr	Glu	Cys	Leu	Pro	Cys	Gly	Glu
								50		55			60		
Ser	Glu	Phe	Leu	Asp	Thr	Trp	Asn	Arg	Glu	Thr	His	Cys	His	Gln	His
								65		70			75		80
Lys	Tyr	Cys	Asp	Pro	Asn	Leu	Gly	Leu	Arg	Val	Gln	Gln	Lys	Gly	Thr
								85		90			95		

Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Glu Gly Trp His Cys Thr  
 100 105 110  
 Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly  
 115 120 125  
 Phe Gly Val Lys Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu  
 130 135 140  
 Pro Cys Pro Val Gly Phe Phe Ser Asn Val Ser Ser Ala Phe Glu Lys  
 145 150 155 160  
 Cys His Pro Trp Thr Ser Cys Glu Thr Lys Asp Leu Val Val Gln Gln  
 165 170 175  
 Ala Gly Thr Asn Lys Thr Asp Val Val Cys Gly Pro Gln Asp Arg Leu  
 180 185 190  
 Arg Ala Leu Val Val Ile Pro Ile Ile Phe Gly Ile Leu Phe Ala Ile  
 195 200 205  
 Leu Leu Val Leu Val Phe Ile Lys Lys Val Ala Lys Lys Pro Thr Asn  
 210 215 220  
 Lys Ala Pro His Pro Lys Gln Glu Pro Gln Glu Ile Asn Phe Pro Asp  
 225 230 235 240  
 Asp Leu Pro Gly Ser Asn Thr Ala Ala Pro Val Gln Glu Thr Leu His  
 245 250 255  
 Gly Cys Gln Pro Val Thr Gln Glu Asp Gly Lys Glu Ser Arg Ile Ser  
 260 265 270  
 Val Gln Glu Arg Gln  
 275

<210> 13  
 <211> 459  
 <212> DNA  
 <213> Homo sapiens

<220>  
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 <222> (0)...(0)  
 <223> Human IL-2 precursor

<221> CDS  
 <222> (1)...(459)

<400> 13  
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 Met Tyr Arg Met Gln Leu Leu Ser Cys Ile Ala Leu Ser Leu Ala Leu  
 1 5 10 15  
 gtc gca aac agt gca cct act tca agt tct aca aag aaa aca cag cta 96  
 Val Ala Asn Ser Ala Pro Thr Ser Ser Thr Lys Lys Thr Gln Leu  
 20 25 30  
 caa ctg gag cat tta ctg ctg gat tta cag atg att ttg aat gga att 144  
 Gln Leu Glu His Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile  
 35 40 45  
 aat aat tac aag aat ccc aaa ctc acc agg atg ctc aca ttt aag ttt 192  
 Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg Met Leu Thr Phe Lys Phe  
 50 55 60  
 tac atg ccc aag aag gcc aca gaa ctg aaa cat ctt cag tgt cta gaa 240  
 Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu  
 65 70 75 80  
 gaa gaa ctc aaa cct ctg gag gaa gtg cta aat tta gct caa agc aaa 288  
 Glu Glu Leu Lys Pro Leu Glu Glu Val Leu Asn Leu Ala Gln Ser Lys  
 85 90 95  
 aac ttt cac tta aga ccc agg gac tta atc agc aat atc aac gta ata 336  
 Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile

100

105

110

gtt ctg gaa cta aag gga tct gaa aca aca ttc atg tgt gaa tat gct 384  
 Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala  
 115 120 125

gat gag aca gca acc att gta gaa ttt ctg aac aga tgg att acc ttt 432  
 Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe  
 130 135 140

tgt cag agc atc atc tca aca ctg act 459  
 Cys Gln Ser Ile Ile Ser Thr Leu Thr  
 145 150

<210> 14  
 <211> 153  
 <212> PRT  
 <213> Homo sapiens

<400> 14  
 Met Tyr Arg Met Gln Leu Leu Ser Cys Ile Ala Leu Ser Leu Ala Leu  
 1 5 10 15  
 Val Ala Asn Ser Ala Pro Thr Ser Ser Thr Lys Lys Thr Gln Leu  
 20 25 30  
 Gln Leu Glu His Leu Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile  
 35 40 45  
 Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg Met Leu Thr Phe Lys Phe  
 50 55 60  
 Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu  
 65 70 75 80  
 Glu Glu Leu Lys Pro Leu Glu Glu Val Leu Asn Leu Ala Gln Ser Lys  
 85 90 95  
 Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile  
 100 105 110  
 Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala  
 115 120 125  
 Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe  
 130 135 140  
 Cys Gln Ser Ile Ile Ser Thr Leu Thr  
 145 150

<210> 15  
 <211> 399  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (0)...(0)  
 <223> Mature human IL-2

<221> CDS  
 <222> (1)...(399)

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 Ala Pro Thr Ser Ser Thr Lys Lys Thr Gln Leu Gln Leu Glu His  
 1 5 10 15

tta ctg ctg gat tta cag atg att ttg aat gga att aat aat tac aag 96  
 Leu Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys  
 20 25 30

aat ccc aaa ctc acc agg atg ctc aca ttt aag ttt tac atg ccc aag 144

Asn Pro Lys Leu Thr Arg Met	Leu Thr Phe Lys Phe Tyr Met Pro Lys		
35	40	45	
aag gcc aca gaa ctg aaa cat ctt cag tgt cta gaa gaa gaa ctc aaa	Lys Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu Glu Glu Leu Lys	192	
50	55	60	
cct ctg gag gaa gtg cta aat tta gct caa agc aaa aac ttt cac tta	Pro Leu Glu Val Leu Asn Ala Gln Ser Lys Asn Phe His Leu	240	
65	70	75	80
aga ccc agg gac tta atc agc aat atc aac gta ata gtt ctg gaa cta	Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile Val Leu Glu Leu	288	
85	90	95	
aag gga tct gaa aca aca ttc atg tgt gaa tat gct gat gag aca gca	Lys Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala Asp Glu Thr Ala	336	
100	105	110	
acc att gta gaa ttt ctg aac aga tgg att acc ttt tgt cag agc atc	Thr Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe Cys Gln Ser Ile	384	
115	120	125	
atc tca aca ctg act		399	
Ile Ser Thr Leu Thr			
130			
<210> 16			
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<213> Homo sapiens			
<400> 16			
Ala Pro Thr Ser Ser Ser Thr Lys Lys Thr Gln Leu Gln Leu Glu His			
1	5	10	15
Leu Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys			
20	25	30	
Asn Pro Lys Leu Thr Arg Met Leu Thr Phe Lys Phe Tyr Met Pro Lys			
35	40	45	
Lys Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu Glu Glu Leu Lys			
50	55	60	
Pro Leu Glu Glu Val Leu Asn Leu Ala Gln Ser Lys Asn Phe His Leu			
65	70	75	80
Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile Val Leu Glu Leu			
85	90	95	
Lys Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala Asp Glu Thr Ala			
100	105	110	
Thr Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe Cys Gln Ser Ile			
115	120	125	
Ile Ser Thr Leu Thr			
130			
<210> 17			
<211> 396			
<212> DNA			
<213> Artificial Sequence			
<220>			
<223> des-alanyl 1, C125S human IL-2 mutein			
<221> CDS			
<222> (1)...(396)			
<400> 17			

cct act tca agt tct aca aag aaa aca cag cta caa ctg gag cat tta	48
Pro Thr Ser Ser Ser Thr Lys Lys Thr Gln Leu Gln Leu Glu His Leu	
1 5 10 15	
ctg ctg gat tta cag atg att ttg aat gga att aat aat tac aag aat	96
Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys Asn	
20 25 30	
ccc aaa ctc acc agg atg ctc aca ttt aag ttt tac atg ccc aag aag	144
Pro Lys Leu Thr Arg Met Leu Thr Phe Lys Phe Tyr Met Pro Lys Lys	
35 40 45	
gcc aca gaa ctg aaa cat ctt cag tgt cta gaa gaa gaa ctc aaa cct	192
Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu Glu Leu Lys Pro	
50 55 60	
ctg gag gaa gtg cta aat tta gct caa agc aaa aac ttt cac tta aga	240
Leu Glu Glu Val Leu Asn Leu Ala Gln Ser Lys Asn Phe His Leu Arg	
65 70 75 80	
ccc agg gac tta atc agc aat atc aac gta ata gtt ctg gaa cta aag	288
Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile Val Leu Glu Leu Lys	
85 90 95	
gga tct gaa aca aca ttc atg tgt gaa tat gct gat gag aca gca acc	336
Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala Asp Glu Thr Ala Thr	
100 105 110	
att gta gaa ttt ctg aac aga tgg att acc ttt tct cag agc atc atc	384
Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe Ser Gln Ser Ile Ile	
115 120 125	
tca aca ctg act	396
Ser Thr Leu Thr	
130	
<210> 18	
<211> 132	
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<220>	
<223> des-alanyl 1, C125S human IL-2 mutein	
<400> 18	
Pro Thr Ser Ser Ser Thr Lys Lys Thr Gln Leu Gln Leu Glu His Leu	
1 5 10 15	
Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys Asn	
20 25 30	
Pro Lys Leu Thr Arg Met Leu Thr Phe Lys Phe Tyr Met Pro Lys Lys	
35 40 45	
Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu Glu Leu Lys Pro	
50 55 60	
Leu Glu Glu Val Leu Asn Leu Ala Gln Ser Lys Asn Phe His Leu Arg	
65 70 75 80	
Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile Val Leu Glu Leu Lys	
85 90 95	
Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala Asp Glu Thr Ala Thr	
100 105 110	
Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe Ser Gln Ser Ile Ile	
115 120 125	
Ser Thr Leu Thr	
130	